

IME01-001

In the claims:

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Please cancel claim 26.

Please amend the following claim:

19. A process for simultaneously performing multiple, independently controlled, chemical reactions, comprising:

providing, on a heat sink, a printed circuit board on which is an array of blocks, said blocks having high thermal conductivity;

B¹
providing an array of reaction chambers in a chip formed of material having low thermal conductivity, said chip being disposable and selected from the group consisting of plastics, polymers, elastomers, glass, silica, and ceramics;

filling each reaction chamber with reagents necessary for said chemical reaction and then pressing the chip against the blocks in a manner such that at least one reaction chamber symmetrically overlies a single block; and

independently heating each block that is overlaid by a filled reaction chamber whereby the reagents in each chamber are maintained at a constant and uniform temperature for a time period, said temperature and time period being independently adjustable for each chamber.

Please add the following new claims:

27. A process for simultaneously performing multiple, independently controlled, chemical reactions, comprising:

providing, on a heat sink, a printed circuit board on which is an array of blocks, said blocks having high thermal conductivity;

providing an array of reaction chambers in a chip formed of material having low thermal conductivity;

B2 filling each reaction chamber with reagents necessary for said chemical reaction and then pressing the chip against the blocks, in a manner such that at least one reaction chamber symmetrically overlies a single block;

attaching sidewalls to the chip, said sidewalls extending downwards from the chip by an amount such that, when the chip touches the blocks said sidewalls just contact the printed circuit board, thereby forming an airtight enclosure;

evacuating the enclosure through a hole that passes through both the heat sink and the printed circuit board; and

independently heating each block that is overlaid by a filled reaction chamber whereby the reagents in each chamber are maintained at a constant and uniform temperature for a time period, said temperature and time period being independently adjustable for each chamber.

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28. A process for simultaneously performing multiple, independently controlled, chemical reactions, comprising:

providing, on a heat sink, a printed circuit board on which is an array of blocks, said blocks having high thermal conductivity;

providing an array of reaction chambers in a chip formed of material having low thermal conductivity;

filling each reaction chamber with reagents necessary for said chemical reaction

and then pressing the chip against the blocks, in a manner such that at least one reaction chamber symmetrically overlies a single block;

providing a covering case, having a ceiling, that rests on the printed circuit board and that encloses both the blocks and the chip;

providing rods that extend downwards from said ceiling, each rod having a free end that is pointed and a length such that, when the covering case rests on the circuit board, said rods press down on the chip;

placing the covering case on the circuit board thereby causing said rods to press the chip against the blocks; and

independently heating each block that is overlaid by a filled reaction chamber whereby the reagents in each chamber are maintained at a constant and uniform temperature for a time period, said temperature and time period being independently adjustable for each chamber.

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29. A process for simultaneously performing multiple, independently controlled, chemical reactions, comprising:

providing, on a heat sink, a printed circuit board on which is an array of blocks, said blocks having high thermal conductivity;

providing an array of reaction chambers in a chip formed of material having low thermal conductivity;

filling each reaction chamber with reagents necessary for said chemical reaction and then pressing the chip against the blocks, in a manner such that at least one reaction chamber symmetrically overlies a single block;

providing a fixture that includes an additional heat sink, an additional printed circuit board, and additional blocks;

positioning said fixture in an inverted orientation to touch the chip with said additional heat sink, additional printed circuit board, and additional blocks being aligned relative to said heat sink, printed circuit board, and blocks;

using an adjustable clamp, pressing together the fixture, the chip, and the blocks; and

independently heating each block that is overlaid by a filled reaction chamber whereby the reagents in each chamber are maintained at a constant and uniform temperature for a time period, said temperature and time period being independently adjustable for each chamber.
